Contribution ID: **106** Type: **Talk**

Optical spectroscopy of the transitional millisecond pulsar PSR J1023+0038

Transitional millisecond pulsars (tMSP) represent a dynamic category of celestial sources that establish a crucial connection between low-mass X-ray binaries and millisecond radio pulsars. These systems exhibit transitions from rotation-powered to accretion-powered states and vice versa, highlighting the tight evolutionary link expected by the so-called recycling scenario. In their active phase, these sources manifest two distinct emission modes named high and low, occasionally punctuated by sporadic flares. In this talk, I would like to present high-time resolution spectroscopic observations of the binary tMSP J1023+0038 covering more than an entire orbital period, in the sub-luminous disc state, showing evidence for a significant variability of the emission line and continuum properties over a timescale of minutes. I would like to explore the behaviours linked to the brightest emission lines, focusing on their possible origins, spatial distribution within the disk, and the correlations among the different observed patterns.

Contribution

Oral talk

Affiliation

INAF-OAB, Merate

E-mail

marco.messa@inaf.it

Author: MESSA, Marco Maria (Istituto Nazionale di Astrofisica (INAF))

Co-authors: BAGLIO, Maria Cristina (Istituto Nazionale di Astrofisica (INAF)); D'AVANZO, Paolo (Istituto Nazionale di Astrofisica (INAF))

Presenter: MESSA, Marco Maria (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Wind (Observation, Theory and modelling)

Track Classification: Talk